

What is claimed is:

1. A micro electro mechanical system display cell comprising:
a transparent substrate;
two black matrix layers on the transparent substrate;
two supporters respectively disposed on the black matrix layers wherein each of the supporters having a width smaller than the width of each of the black matrix layers;
a first electrode formed between the supporters and on the black matrix layers;
and
a second electrode supported by the supporters wherein a cavity is formed between the first electrode and the second electrode.
2. The micro electro mechanical system display cell according to claim 1, further comprising a planarization layer formed between the black matrix layers and under the first electrode.
3. The micro electro mechanical system display cell according to claim 2, wherein the thickness of the planarization layer is substantially equal to or smaller than the thickness of the black matrix layers.
4. The micro electro mechanical system display cell according to claim 2, wherein the material of planarization layer is insulating material or dielectric material.
5. The micro electro mechanical system display cell according to claim 2, wherein the material of planarization layer is an insulation material.
6. The micro electro mechanical system display cell according to claim 2, wherein a material for forming the planarization layer is dielectric.

7. The micro electro mechanical system display cell according to claim 2, wherein a material for forming the planarization layer is photosensitive resin, silicon oxide or silicon nitride.

8. The micro electro mechanical system display cell according to claim 7, wherein the photosensitive organic resin is epoxy, polyacrylic, polyimide or polyamide.

9. The micro electro mechanical system display cell according to claim 1, wherein each of the black matrix layers is 0-50 micrometers wider than each of the supporters.

10. The micro electro mechanical system display cell according to claim 1, wherein each of the black matrix layers is 0-10 micrometers wider than each of the supporters.

11. The micro electro mechanical system display cell according to claim 1, wherein the material of the black matrix layer is chromium metal, chromium oxide or chromium metal/chromium oxide composite material.

12. The micro electro mechanical system display cell according to claim 1, wherein the material of the first electrode is indium tin oxide, indium-doped zinc oxide or indium oxide.

13. The micro electro mechanical system display cell according to claim 1, wherein the second electrode is an electrode capable of being deformed upwards or downwards.

14. The micro electro mechanical system display cell according to claim 1, wherein the material of the second electrode is selected from the group consisting of silver, aluminum, chromium, copper and cobalt.

15. The micro electro mechanical system display cell according to claim 1, wherein the material of the supporters is selected from the group consisting of positive photoresist, negative photoresist, acrylic resin and epoxy resin.

16. A method for fabricating a micro electro mechanical system display cell on a transparent substrate, the method at least comprising:

forming two black matrix layers and a planarization layer wherein the black matrix layers and the planarization layer are arranged alternately;

forming a first electrode on the black matrix layers and the planarization layer;

forming a sacrificial layer on the first electrode;

forming at least two openings in the first electrode and the sacrificial layer;

forming a supporter in each of the openings;

forming a second electrode is on the sacrificial layer and the supporters; and

removing the sacrificial layer.

17. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein the second electrode is an electrode capable of being deformed upwards or downwards.

18. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein the thickness of the planarization layer is substantially equal to the thickness of the black matrix layers.

19. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein the thickness of the planarization layer is smaller than the thickness of the black matrix layers.

20. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein the material of planarization layer is insulating material.

21. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein the material of planarization layer is dielectric material.

22. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein the material of planarization layer is photosensitive resin, silicon oxide or silicon nitride.

23. The method for fabricating a micro electro mechanical system display cell according to claim 22, wherein the photosensitive organic resin is epoxy, polyacrylic, polyimide or polyamide.

24. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein each of the black matrix layers is 0-50 micrometers wider than each of the supporters.

25. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein each of the black matrix layers is 0-10 micrometers wider than each of the supporters.

26. The method for fabricating a micro electro mechanical system display cell according to claim 16, wherein the material of the second electrode is selected from the group consisting of silver, aluminum, chromium, copper and cobalt.

27. The micro electro mechanical system display cell according to claim 16, wherein the material of the supporters is selected from the group consisting of positive photoresist, negative photoresist, acrylic resin and epoxy resin.